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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/523,204

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David Sharony

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EXAMINER

ALLISON, ANDRAE S

ART UNIT

PAPER NUMBER

2624

MAIL DATE

DELIVERY MODE

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/523,204	Applicant(s) SHARONY, DAVID	
	Examiner ANDRAE S. ALLISON	Art Unit 2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on Amendment filed 03/19/2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 2-10, 12-14, 16-18, 20, 21, 23--26, 28, 29, 31-33 and 36-40 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 2-10, 12-14, 16-18, 20, 21, 23--26, 28, 29, 31-33 and 36-40 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Remarks

1. The Office Action has been made issued in response to amendment filed March 9, 2009. Claims 2-10, 12-14, 16-18, 20, 21, 23--26, 28, 29, 31-33 and 36-40 are pending.

Examiner's Notes

The claims were allowed in the previous office action. However, upon search of the prior art, the allowance is withdrawn and a new grounds of rejections are presented.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 3, 8, 21 and 23 are rejected under 35 U.S.C. 112, second paragraph, as failing to set forth the subject matter which applicant(s) regard as their invention.

Claim 3 recites the limitation "the body condition score" in line 2 and the rear part of the cow in line 4. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 2-10, 12-14, 16-18, 20, 21, 23--26, 28, 29, 31-33 and 36-40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Coffey (NPL Document titled: A feasibility study on the automatic recording of condition score in dairy cows) in view of Ellis (US Patent No.: 5,412,420).

As to independent claim 2, Coffey disclose a method for optimizing nutrition of an animal (using body tissue to support lactation - see [p][001], line 1), the method comprising automatically monitoring the energy balance of the animal (automated method for determining body condition scores for dairy cows – see title), said monitoring comprising: 1) imaging a predetermined region (e.g. tail head – see [p][002]) of interest on the animal body, and generating data indicative (see [p][002] – where a digital camera is used to captured images of the dairy cows) thereof; ii) processing the generated data to obtain a three-dimensional representation of the region of interest; iii) analyzing said three-dimensional representation to determine a predetermined measurable parameter indicative of a surface relief of the region of interest indicative of the energy condition of the animal (see [p][003-005]). However, Coffey does not teach processing the generated data to obtain a three-dimensional representation of the region of interest. Ellis disclose a method for evaluating the physical characteristics of animals (see column 1, lines 6-15) which includes the step of processing the generated data to obtain a three-dimensional representation of the region of interest (generate three dimensional of a single location – see column 2, lines 40-46). At the

time of the invention, it would have been obvious to a person of ordinary skill in the art to modified the method of automated method for determining body condition scores for dairy cows of Coffey with the for evaluating the physical characteristics of animals of Ellis to calculate three-dimensional phenotypic measurements for conformation of the animal by combining measurements of selected points on the animal (see abstract).

As to claim independent 24, this claim differs from claim 2 only in that claim 24 is system whereas, claim 2 is method and the limitations an optical device including an illuminating assembly and a light detection assembly, a control unit connectable to the optical device, the control unit comprising a memory utility a data processing are additively recited in the preamble. Coffey clearly teaches a system comprising: an optical device including an illuminating assembly (a laser light array - see [p][002]) and a light detection assembly (note that a digital camera captures the images – see [p][002], line 2). However Coffey does not teach a control unit connectable to the optical device, the control unit comprising a memory utility a data processing. Ellis discloses a system (see Fig 4) comprising: a control unit (402- see Fig 4) connectable to the optical device, the control unit comprising a memory. Therefore combining Coffey with Ellis would meet the claim limitations for the same reasons as previously discussed in claim 2 above.

As to claims 3 and 25, Coffey teaches the method for determining the body condition score (BCS) (see [p][002], line 5) of a dairy cow, said region of interest including at least one of the following body parts: the rear part of the cow in the vicinity

of its tail head (see [p][003]).

As to claim 4, Coffey teaches the method wherein said imaging comprises illuminating the region of interest by structured light in the form of an array of spaced-apart light components to thereby illuminate an array of spaced-apart locations within the region of interest (see [p][002] – where a laser light array is used to create light lines across the tail head of the cow), and collecting light returned from the illuminated locations (note that a digital camera captures the images – see [p][002], line 2)

As to claim 5, note the discussion above, Ellis teaches the method, wherein said processing of the three-dimensional representation utilizes reference data representative of the body condition scales and corresponding values of said predetermined measurable parameter indicative of the curvature of the region of interest (see column 6, lines 35-67 – where reference tables are used).

As to claims 6 and 36, note the discussion above, Ellis teaches the method, wherein said predetermined measurable parameter indicative of the curvature of the region of interest is representative of a depth of the region of interest (note that the depth is determined – see column 11, lines 18-21).

As to claims 7 and 37, Coffey teaches the method wherein said specific measurable parameter is indicative of the curvature of the surface (see [p][003], lines 3-

4) of the region of interest with respect to a predefined reference plane (e.g. pin bone – see [p][003], line 3).

As to claim 8, Coffey teaches the method, wherein said specific measurable parameter is indicative of the curvature of the surface of the region of interest with respect to a predefined reference plane, said reference plane being tangential to the dorsal or the rear part of the cow at the point of pin bone and tail (see [p][003]) .

As to claims 9, 33 and 40, Coffey teaches the method, wherein said specific measurable parameter is representative of at least one of the following a distance between the reference plane and a point in the region of interest mostly distant from said reference plane (see [p][003]).

As to claims 10 and 26, Coffey teaches the method, wherein said array of incident light components is produced by providing an array of light emitting elements (array of laser lights – see [p][002], line 1) generating said array of incident light components, respectively.

As to claims 12 and 31, Coffey teaches the method, wherein the processing of said generated data comprises carrying out one of the following: (a) determining a relative shift of the illuminated locations from a relative location of the corresponding light component in the array of light components, said shift being caused by the

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curvature of the illuminated surface and being indicative of said curvature (see [p][003])..

As to claim 13, note the discussion of claim above. .

As to claims 14 and 32, note the discussion above, Ellis teaches the method, wherein (a) is carried out, and said imaging of the region of interest comprises carrying out one of the following: (i) acquiring an image of the region of interest, said shift being a distance between the illuminated location on the curved surface of the body part and a corresponding location along the trajectory of the corresponding light component (see column 12, lines 63-67 and column 14); and (ii) acquiring at least two images of the region of interest with different angles of collection of light returned from the region of interest, said shift being a distance between two illuminated locations of a matching pair of locations in the two images (see column 12, lines 63-67 and column 14).

As to claim 16, Coffey teaches the method, wherein the imaging comprises acquiring a sequence of images of the region of interest by a single camera at different relative positions between the camera and the region of interest (note the digital camera is mounted under a sliding rail – see [p][002], lines 3-4).

As to claims 17 and 29, note the discussion above, Ellis teaches the method,

wherein said camera is a video camera (see column 1, line 48).

As to claims 18 and 20, Coffey in view of Ellis does not teach the method, wherein said imaging is carried out during a movement of the animal along a predetermined path and the data representative of the acquired images is indicative of the existence of at least one of the following conditions: an in-coordination in the natural movement of the cow, and changes in the natural movement of the cow. However, it would have been obvious to capture images during a movement of the animal along a predetermined path and the data representative of the acquired images is indicative of the existence of an in-coordination in the natural movement of the cow or changes in the natural movement of the cow so that an entire image of the back, spine and back bone and muscle can be capture and the motion of the animal can determine the muscle mass of the animal.

As to claim 21, Coffey teaches the method, comprising imaging an additional region of interest in the vicinity of the transverse processes of the lumbar vertebrae and the spinous processes of the lumbar vertebrae of the cow, and determining the BCS with respect to this additional region of interest, thereby enabling determination of a tendency of the energy balance change for the imaged cow (see [p][002-003]).

As to claim 23, Coffey teaches the method, determining a difference between the

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two determined BCS values, said difference being indicative of a tendency in the cow energy balance condition (note that a correlation of two measurements were used in determining the cow's BCS).

As to claims 39, note the discussion above, Ellis teaches the method, wherein said predetermined measurable parameter is representative of at least one of the following: a part of a volume defined by the illuminated surface regions and said reference plane (see column 7, lines 5-15).

Inquires

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ANDRAE S. ALLISON whose telephone number is (571)270-1052. The examiner can normally be reached on Monday-Friday, 8:00 am - 5:00 pm, EST. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vikram Bali can be reached on (571) 272-7415. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Andrae S Allison/

June 16, 2009

/Vikkram Bali/

Supervisory Patent Examiner, Art Unit 2624